

4293

33
33
42
42

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
....., Director	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">G. & G. SURVEY L. & A. JUN 29 1928 Acc. No.</div>	
State: <u>Porto Rico</u>	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. ⁹ 4293
LOCALITY	
<u>South Coast of Porto Rico</u>	
<u>Santa Isabel and Vic. and Muertos Island</u>	
1926	
CHIEF OF PARTY	
<u>G. C. Mattison</u>	

DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR.

PORTO RICO

DESCRIPTIVE REPORT
to accompany
TOPOGRAPHIC SHEET # 9 4293

S.S. RANGER

1926

G.C. MATTISON,
Chief of Party

DESCRIPTIVE REPORT
to accompany
TOPOGRAPHIC SHEET # 9

Instructions dated July 3, 1926.

GENERAL DESCRIPTION

This is a revision survey of the shoreline in vicinity of Santa Isabel and the essential topographic features and landmarks of the interior within the approximate limits found by meridians $66^{\circ} 21'$ and $66^{\circ} 33'$. The work is carried back to parallel $18^{\circ} 00' 30''$ and includes to seaward, Caracoles Island, Jauca Islands, Berberia Island, Muertos Island and the Hammock.

The coast in general is a low plain backed by higher land several miles inland.

Point Petrona is made up entirely of mangrove growth which extends back for some distance forming a mangrove swamp. To the eastward of Point Petrona, there are several small bights, two of which have sand beaches at their head. These are open to the southeast allowing a heavy swell to enter. The coastline east of Point Petrona with the exception of the bights is made up of mangrove and protected by coral reef. There is a soft grassy bottom covered with shoal water between the reef and mangrove.

Between Santa Isabel Landing and Point Petrona, there are several small islands lying some two hundred meters from shore, made up of mangrove. A coral shoal makes out approximately $1/4$ mile to the westward of the largest of the group. A good anchorage for small boats is afforded behind these islands.

From Point Petrona westward for the distance of one mile, the shoreline is also lined with mangrove. From one mile west of Point Petrona to the western limits of the sheet, the shoreline is made up of sand and gravel beach lined with occasional clumps of palm trees and underbrush. There are numerous lagoons cutting the beach which are fed by drainage from the cane fields. There is a small reef lying $1/4$ mile south of the point on which ^AJaraguas is located. The eastern end of this reef is awash at times. A small anchorage is afforded behind the western end of the reef, and is used by local fishermen.

CARACOLES ISLAND

A small island lying about one mile south southeast of Point Petrona. The northwest end is low sand spit, the rest being covered with mangrove growth. The shoreline where visible is made up of loose coral. There are several small passages between the mangroves near the

eastern end. A coral reef extends along the southern and eastern sides of the island.

JAUCA ISLAND

A group of three small islands lying 1-1/4 miles south of Point Petrona. All islands are covered with mangroves with shoreline visible intermittently. The easternmost island is made up of mangroves entirely, with no shoreline showing. The middle one of the group is covered with mangrove with shoreline showing around the southern end, made up of loose coral. The western island on which station "JAUCA₂" is located, has at its northern end a small clearing and beach. The shoreline, made up of sand is visible at a number of places around the island. There is a coral reef extending along the southern side of the three islands to two thirds of the distance between Caracoles Island and Jauca Islands. The western limit of the reef was not determined.

BERBERIA ISLAND

A low flat island lying 3-1/2 miles E.N.E. of Muertos Island and four miles west of Jauca Islands. The entire island is covered with mangrove and brush with the exception of the northern end which is a low sand spit. The shoreline is visible in places along the western side and made up of sand beach. The shoreline cannot be seen on the eastern side of the island. At the southern end of the island, a small passage cuts through the mangroves opening on the east side. The island is protected by a reef along the eastern side, 100 meters off.

MUERTOS ISLAND

The most prominent island on the south coast of Porto Rico, marked by a light at its summit.

The island is covered with trees and underbrush with the exception of the cliffs in the vicinity of the lighthouse and the cleared part near the western end. A sharp peak marks the southwestern end of the island. The shoreline along the southern side is made up of low rock cliffs and sand beach. There is a beach extending along the low portion between the small peak and the lighthouse. The shoreline along the northern side is low and rocky with a small beach near the landing.

THE HAMMOCK

A low flat island lying off the southwestern end of Muertos Island. The island is covered with short tropical grass and the shoreline is made up of low rocky bluffs.

SURVEY METHODS

Control was furnished by the triangulation of the party working from the positions of Muertos Island Lighthouse and Cardona Island Lighthouse, as determined in 1899.

Starting at "River", a traverse was run to "How". This was joined by a traverse from "Jacaguas" with error of closure. Three point fixes using, "Muertos", "Berberia₂" and "Tank" were taken to check up any error along the traverse. A traverse was then run from "Jacaguas" to "Warehouse" with an error of 10 meters in azimuth, this was later adjusted. Orientation was made on "Tank" wherever possible with resection on "Berberia₂".

From "Warehouse" to "Cayito" the error of closure was within the allowable. The traverse was continued as far as possible to Point Petrona. At the limits of the mangrove swamp a three point fix using "Pales", "Windmill" and "Tank" was taken, ending the traverse.

Then starting at "Jueyes", the traverse was run to "Mangrove" and "Petrona". Error of closure between 5 and 10 meters.

In obtaining the limits of the mangrove shoreline and the small islands west of Point Petrona, stadia shots were taken from Petrona and sextant used. On the traverse from the westward, the inner shoreline of the largest Islands was located as much as possible. White washed boards were located by stadia shots and cuts. These located signals later were used in the sextant fixes.

To determine to outer shore of the largest islands, a small signal buoy was placed offshore a short distance with "End" and "So. Tower" on range. This was used as a center object. The nature of the bottom and depth of the water was such as to prohibit the use of the plane-table.

Caracoles Island was located by a short traverse and with sextant fixes on the northern side.

The most western of the Jauca Islands was located by traverse from "Jauca₂". The other two islands were located by plane-table cuts and sextant fixes.

Short traverses were run from both "Berberia₂" and "South" on Berberia Island. The sextant was used for the remainder of the island, along the eastern side, on the reef, and the southwestern point.

Muertos Island shoreline was traverses from "High" to "North₂" and from "North₂" to the lighthouse. The Hammock was not visited.

All interior features such as roads, railroad, prominent buildings etc were located by sextant fixes and cuts. A Short traverse was run from "Fortuna B" to "Boca Chica B" to tie in the main road. This closed within the allowable error. From "Tank", a traverse was run locating the important streets in Santa Isabel and the road to the landing, tying in with the main shore traverse. Minor cane roads and railroads were not located. Such information can be obtained from the blue print maps accompanying the sheet.

B.P.S. 21764 to 21767

A difference in magnetic variation was noted at "RIVER" and "JACAGUAS". At "RIVER" the variation was found to be $4^{\circ} 35' W.$ and at Jacaguas $5^{\circ} 05' W.$ No apparent reason for the difference is evident. Both stations are on gravel beach and the table was set directly over the station at both places.

CHANGES IN SHORELINE

Very little change in the shoreline was noted. From "RIVER" to "JACAGUAS", the beach is practically the same, having only receded a small amount. At "JACAGUAS", the point has been rounded. From "JACAGUAS" to "CAYITO", only the points have been shifted, The general outline remaining the same. Cayito Point has been rounded and shifted to the westward.

In the vicinity of Point Petrona the mangroves have grown out somewhat. The same is true of the mangrove islands, Caracoles Jauca Islands and Berberia. There are no changes in the shoreline of Muertos Island and the Hammock.

STREAMS

There are no navigable streams in the locality. Rio Descalabrado and Rio Jacaguas are possibly navigable by small skiffs in times of high water and then only for short distances. No traverses were run on these streams. Points where they intersected the highways and railroad were located by sextant and the remainder sketched in from maps furnished by the Porto Rico Irrigation Service.

Rio Coamo as shown on the present charts is no longer there. It is being used for purposes of irrigation, a reservoir having been constructed in the river bed approximately three miles north of Santa Isabel.

FORM LINES

Elevations on Muertos Island were checked by vertical angles from "RIVER", "JACAGUAS", and "CAYITO" and the form lines traced from the original topographic sheet. Form lines for the remainder of the sheet were drawn in as the land is practically level. Such elevations as needed can be taken from the blue prints which show contours at 5' intervals.

LANDMARKS

There are a number of stacks standing back from the beach which make very good landmarks.

The most prominent of these is one at Fortuna central at the western limits of the sheet. This is a large gray brick stack approximately 100' high. It is most prominent stack within the limits covered by the sheet. There is also a steel stack within a hundred meters of the brick stack.

About three quarters of a mile to the southeastward of Fortuna there are three stacks at Central Boca Chica, one red brick and two steel.

To the northward of Berberia Island approximately one mile back from the shoreline there is a new red stack and a steel stack located at Cortada Central. An old red brick stack stands between Cortada stacks and the beach. This stack on the steel stack at Cortada is used as an anchorage range. These stacks show up well under some conditions but when in a shadow they are hard to see. The warehouse at the Cortada Landing also shows up well to seaward.

In the vicinity of Santa Isabel there is a black steel water tank. The tank has girder supports and can easily be identified. The small steel stacks in the vicinity of Santa Isabel are not so prominent but may be used as landmarks.

BLUE PRINTS

These are prints of the topographic maps made by the U.S. Geological Survey in this vicinity during the year 1909 on thereabouts. Fracings of these maps are in the possession of the Porto Rico Irrigation Service and blue prints were furnished to the party upon request. The maps are on a scale of 1:12000. A check was made on information taken from these prints.

Areas surveyed	26.9 sq. mi. (Stat)
Shoreline "	25.3 mi. "
Roads "	35.6 mi. "

Respectfully submitted

Carl F. Ehlers

Carl F. Ehlers,
Topographer.

Forwarded

G. C. Mattison

Cdly. S. S. Ranger

Inspected and found adequate. The names Pastillo Pt. and Cortada Landing were added to the sheet on recommendation of H. Bacon.

E. P. Davis, Nov. 10, 1928

PLANE TABLE POSITIONS

Object and Description	Lat	D.M.	Long.	D.P.	Remarks
Windmill 11	17 58	976	66 21	990	Windmills all have steel towers with approx. hgt. of 25 to 35'.
Windmill 13	17 58	438 ✓	66 22	189 ✓	
Pump (Steel stack at pump sta.)	17 58	1710	66 20	1022 ✓	Black steel
S.Gable of warehouse, Destino	17 58	497 ✓	66 22	1188 ✓	S.gable warehouse
Windmill 12	17 59	508 ✓	66 23	600 ✓	
Steel stack at, Aloma pump sta	17 58	765 ✓	66 23	1188 ✓	Black steel
Windmill 15	17 57	¹ ✓ 877	66 23	714 ✓	
N.gable warehouse at Hacienda Santa Isabel	17 57	1164 ✓	66 23	1035 ✓	Wh.warehouse 107 m from trian. sta. Windmill
S.gable warehouse at Hacienda, Florida	17 57	1575 ✓	66 23	1750 ✓	
Steel stack at Hacienda Florida	17 57	1666 ✓	66 24	75 ✓	Black stack, steel
Windmill 10	17 59	295 ✓	66 24	661 ✓	
Steel stack at Jobitos pump sta.	17 58	1317 ✓	66 24	1267 ✓	Black steel
Steel stack at Bernard pump sta.	17 57	1814 ✓	66 24	861 ✓	Black steel
Windmill 7	17 57	1810 ✓	66 25	239 ✓	
Windmill 8	17 58	1502 ✓	66 25	195 ✓	
Windmill 16	18 00	219 ✓	66 24	1668 ✓	
Windmill 6	17 58	1017 ✓	66 25	1473 ✓	
Windmill 4	17 59	1733 ✓	66 26	992 ✓	
Windmill 5	17 59	605 ✓	66 26	⁵ ✓ 870 ✓	
Windmill 3	17 59	1597 ✓	66 27	800 ✓	
Windmill 14	17 59	1709 ✓	66 29	238 ✓	
S.gable ruins at Hacienda, Ursula	18 00	692 ✓	66 29	496 ✓	North roof on warehouse

PLANE TABLE POSITIONS (Sheet 2)

Object and Description	Lat	D.M.	Long.	D.P.	Remarks
Windmill 2	18 00	900 ✓	66 29	476 ✓	Steel
Windmill 1	17 59	1350 ✓	66 30	262 ✓	Steel
S.gable warehouse at Hacienda Potala	18 00	328 ✓	66 30	1149 -	
Steel stack at Boca Chica	17 59	381 -	66 31	1390 --	: Stands 40m. from Boca Chica S (Blk.stack)
Bob (tree)	17 57	1035	66 24	1320 ✓	Wily of 2 trees
Rock (W.rock)	17 57	1568 -	66 21	1093 ✓	White rock on loose coral point.
Bow (Rock)	17 57	984 ✓	66 21	1339 ✓	Largest dark boulder
Trunk	17 56	1831 ✓	66 21 ² ✓	1068 ✓	Tree trunk
Lou	17 56	1144 -	66 22	1527 ✓	W.W.boards
Don	17 56	952 ✓	66 23	1758 ✓	W.W. W
Fin	17 56	1400 ✓	66 23	786	" " "
Pam	17 56	1721 ✓	66 23	988	Lone palm in mangroves
Bat	17 56	1560 ✓	66 23	1085	W.W. boards
Car	17 56	1842 ✓	66 23	1293	" " "
Mid	17 56	1600	66 23	1523	" " "
Van	17 56	1740	66 23	1564	" " "
End	17 57	204	66 24	352 ✓	" " "
Last	17 57	538 ✓	66 24	304 152	Tall palm
Lone	17 57	142 371 ✓	66 24	1065 1002 ✓	Lone palm at Santa Isabel landing
Dam	17 57	1212 ✓	66 25	156	W.gable Thatch house
Jane	17 58	504 ✓	66 26	440 -	W.W. Cairn of rocks
Bell	17 58	960 ✓	66 26	676 ✓	Center line of thatch ho.
Top	17 59	148 ✓	66 27	276 ✓	W.W. cairn of rocks
Tar	17 59	1000 -	66 27	1466 225 -	" " " " "

PLANE TABLE POSITIONS
(Sheet 3)

Objects and Description	Lat	D.M.	Long.	D.P.	Remarks
Not	17 59	1044 ✓	66 29	320 ✓	Lone palm
Tab	17 59	1012 ✓	66 29	742 ✓	WW. cairn of rocks
Row	17 59	676 ✓	66 30	444 ✓	" " " "
Ban	17 59	302 ✓	66 30	1538 ✓	Banner on tree trunk
Rat	17 59	22 ✓	66 31	240 ⁴⁸⁰ ✓	C.L. thatched ho.
How	17 58	1688 ✓	66 31	462 ⁹²⁴ ✓	" " " "
Church	17 54	102 ✓	66 30	1096 ✓	WW. on rocks
Wil	17 53	1678 ✓	66 30	1336 ✓	" " "
Dan	17 53	1460 ✓	66 30	1500 ✓	" " "
Cliff	17 53	1244 ✓	66 30	1666 ✓	" " "
Lap	17 58	236 ⁴³⁸ ✓	66 21	1430 ✓	Palm
Tat	17 57	1320 ✓	66 21 ² ✓	452 ✓	Outward gable-Thatched house
Rat	17 57	580 ✓	66 21 ² ✓	172 ✓	WW. boards

Intersection Stations

Fortuna B

Boca Chica B

Fortuna S

Boca Chica S

Green

Cortada B

Amelia

Cortada S

Tank

Windmill

Warehouse

Petrona

Mangrove

High

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Cape May, N.J.September 20, 19 27

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

G.C. MAPPISON

Chief of Party.

DESCRIPTION	POSITION					METHOD OF DETER- MINATION	CHARTS AFFECTED
	Latitude		Longitude		Datum		
	°	D. M. meters	°	D. P. Meters			
Tall Gray Stack with steel stack 96 m. to SSW	17 59	1634.0	66 32	742.5	P.R.	Trisan.	927,902,920
Red brick stack Two steel stacks 34 m North	17 59	345.2	66 31	1373.9	"	"	927,902,920
Red brick stack Steel stack 38 m East	17 59	1553.1	66 26	36.8	"	"	902.920
Red brick stack Stands alone in cane field	17 59	874.0	66 26	421.2	"	"	902,920
Warehouse	17 58	1587.9	66 26	1148.9	"	"	902,920
Black water tank	17 58	702.2	66 24	516.7	"	"	902.920

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaffs and like objects are not sufficiently permanent to chart.

Geographic Names, Topographic Sheet No. 4293

Santa Isabel

The usual Spanish form of this name is Santa Isabela but since all maps consulted whether Spanish or English have the form Santa Isabel, would retain this name. Would also retain the name Santa Isabel Landing immediately to the south.

Cortada Landing

This landing or wharf southwest of ^{Central}Cortada is referred to as Santa Isabel Landing on H. 4699 and as Cortada Landing in the descriptive report of T. 4293. Since the landing is near ^{Central}Cortada and since there is a Santa Isabel Landing near by as above, would apply the name Cortada Landing. The name Santa Isabel Landing is probably used because this is the shipping point for Santa Isabel as well as Cortada.

Jacaguas Landing

Would erase this name from chart 902 as being an erroneous application. Not found on any maps consulted.

Pt. Pastillo

This is the name found on the War Department map of 1899 as applying to the point on which Jacaguas is situated. Would put this on T. 4293 and on chart 902.

also in Bulletin of G S 6583 634 -180-184 1901

Harlow Bacon

Nov. 9, 1928.

Harlow Bacon

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4293

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 9

REGISTER NO.

4293

State PORTO RICO

General locality SOUTH COAST

Locality VICINITY OF SANTA ISABEL AND MUERTOS I.

Scale 1:20,000 Date of survey Aug. 19 - Nov. 15, 1926

Vessel STR. RANGER

Chief of Party G.C. MATTISON

Surveyed by R.C. ROWSE & C.F. EHLERS

Inked by C.F. EHLERS

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated July 3, 1926

Remarks: